FIG. 1

FIG. 2A   REGISTRAR REGISTRATION USING REGISTRAR WEB SITE TO STORE REGISTRATION INFORMATION FOR TRANSMITTAL TO THIRD PARTY WEB SITES FROM REGISTRAR WEB SITE (MAY BE INVOKED BY THE USER OR BY FIGS. 4)
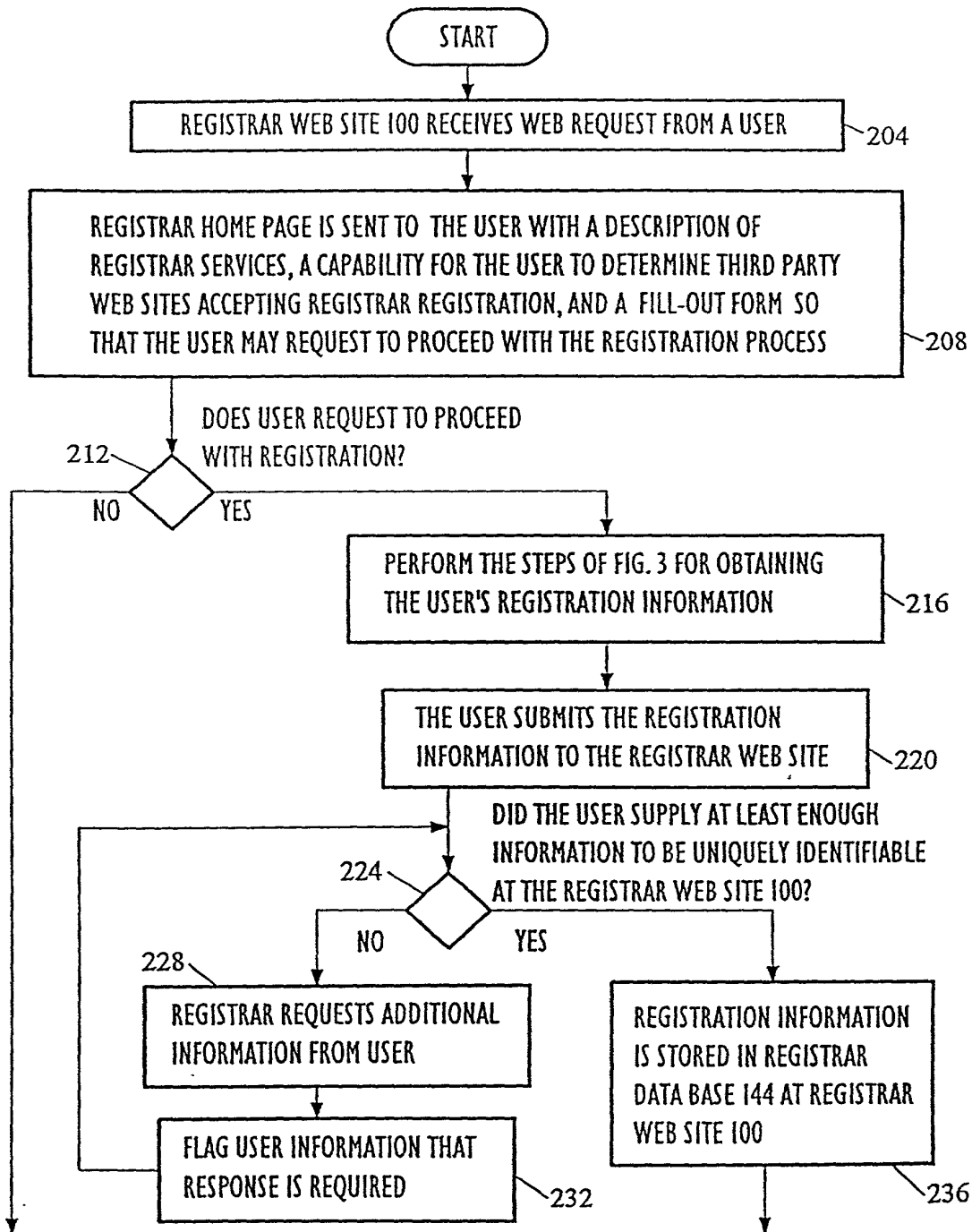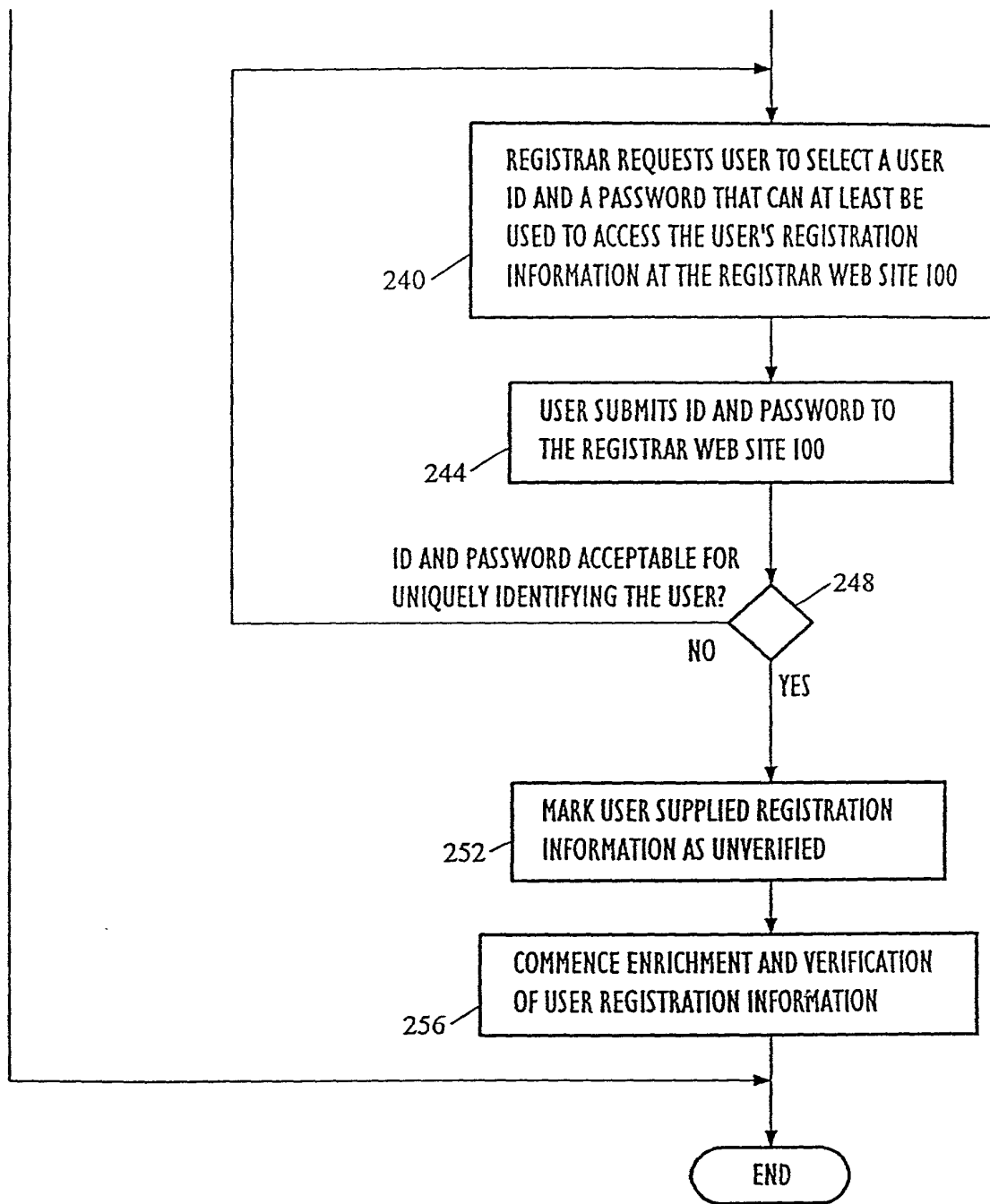
```
                          ( START )
                              │
                              ▼
        ┌──────────────────────────────────────────────────┐
        │ REGISTRAR WEB SITE 100 RECEIVES WEB REQUEST FROM A USER │──204
        └──────────────────────────────────────────────────┘
                              │
                              ▼
   ┌────────────────────────────────────────────────────────────┐
   │ REGISTRAR HOME PAGE IS SENT TO THE USER WITH A DESCRIPTION OF │
   │ REGISTRAR SERVICES, A CAPABILITY FOR THE USER TO DETERMINE THIRD PARTY │
   │ WEB SITES ACCEPTING REGISTRAR REGISTRATION, AND A FILL-OUT FORM SO │
   │ THAT THE USER MAY REQUEST TO PROCEED WITH THE REGISTRATION PROCESS │──208
   └────────────────────────────────────────────────────────────┘
                              │
                              ▼
              DOES USER REQUEST TO PROCEED
       212      WITH REGISTRATION?
          ◇
        NO    YES
                              │
                              ▼
              ┌──────────────────────────────────────┐
              │ PERFORM THE STEPS OF FIG. 3 FOR OBTAINING │
              │ THE USER'S REGISTRATION INFORMATION       │──216
              └──────────────────────────────────────┘
                              │
                              ▼
              ┌──────────────────────────────────────┐
              │ THE USER SUBMITS THE REGISTRATION        │
              │ INFORMATION TO THE REGISTRAR WEB SITE    │──220
              └──────────────────────────────────────┘
                              │
                              ▼
                   DID THE USER SUPPLY AT LEAST ENOUGH
                   INFORMATION TO BE UNIQUELY IDENTIFIABLE
            224    AT THE REGISTRAR WEB SITE 100?
               ◇
             NO        YES
```

DOES USER REQUEST TO PROCEED WITH REGISTRATION?

DID THE USER SUPPLY AT LEAST ENOUGH INFORMATION TO BE UNIQUELY IDENTIFIABLE AT THE REGISTRAR WEB SITE 100?

228 — REGISTRAR REQUESTS ADDITIONAL INFORMATION FROM USER

REGISTRATION INFORMATION IS STORED IN REGISTRAR DATA BASE 144 AT REGISTRAR WEB SITE 100 —236

FLAG USER INFORMATION THAT RESPONSE IS REQUIRED —232

```
REGISTRAR REQUESTS USER TO SELECT A USER
ID AND A PASSWORD THAT CAN AT LEAST BE
USED TO ACCESS THE USER'S REGISTRATION
INFORMATION AT THE REGISTRAR WEB SITE 100
```
240

```
USER SUBMITS ID AND PASSWORD TO
THE REGISTRAR WEB SITE 100
```
244

ID AND PASSWORD ACCEPTABLE FOR
UNIQUELY IDENTIFYING THE USER?   248

NO

YES

```
MARK USER SUPPLIED REGISTRATION
INFORMATION AS UNVERIFIED
```
252

```
COMMENCE ENRICHMENT AND VERIFICATION
OF USER REGISTRATION INFORMATION
```
256

END

FIG. 2B

FIG. 3   USER ENTERS REGISTRAR INFORMATION
(MAY BE INVOKED BY FIGS. 2 AND 12)

START

WHAT INFORMATION HAS THE USER
REQUESTED TO ENTER AND/OR UPDATE?

304

BASIC   EXPANDED

BASIC INFORMATION FILL-OUT
FORMS ARE PRESENTED TO THE
USER, THE FORMS INCLUDING
FIELDS FOR: NAME, E-MAIL
ADDRESS, GENDER AND DATE OF
BIRTH

308

EXPANDED INFORMATION FILL-OUT
FORMS ARE PRESENTED TO THE USER,
THE FORMS INCLUDING FIELDS SUCH
AS: EMPLOYER, TYPE OF EMPLOYMENT,
INCOME, CREDIT CARD NUMBER(S),
SOCIAL SECURITY NUMBER, HOUSEHOLD
SIZE, CHILDREN, CHILDREN'S AGES.

312

USER FILLS IN AT LEAST ONE
FIELD OF THE FILL-OUT FORMS

316

USER REQUESTS TO TERMINATE ENTERING INFORMATION IN
THE CURRENTLY PRESENTED FILL-OUT FORMS

320

DOES THE USER DESIRE TO ENTER
ADDITIONAL INFORMATION?

324

YES
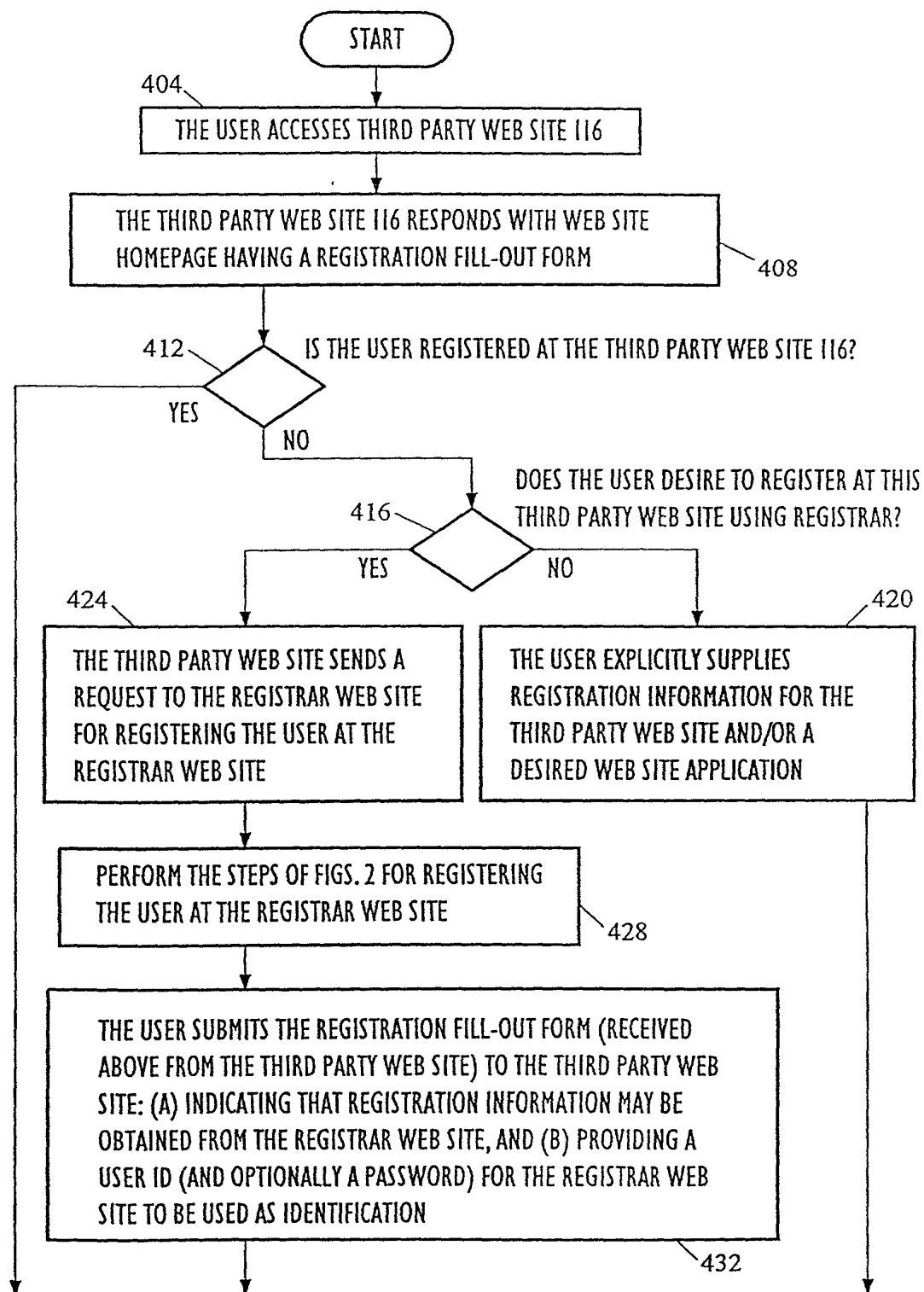
NO

RETURN

FIG. 4A THE USER REGISTERS AT THE REGISTRAR WEB SITE WHEREIN A
THIRD PARTY WEB SITE IS FIRST ACCESSED

```
                    ( START )
                        │
      404               ▼
      ┌─────────────────────────────────────────────┐
      │  THE USER ACCESSES THIRD PARTY WEB SITE 116  │
      └─────────────────────────────────────────────┘
                        │
                        ▼
   ┌───────────────────────────────────────────────────┐
   │  THE THIRD PARTY WEB SITE 116 RESPONDS WITH WEB SITE│
   │  HOMEPAGE HAVING A REGISTRATION FILL-OUT FORM       │──── 408
   └───────────────────────────────────────────────────┘
                        │
      412               ▼      IS THE USER REGISTERED AT THE THIRD PARTY WEB SITE 116?
                     ◇◇◇◇◇
               YES  ◇       ◇
          ◄───────◇           ◇
                    ◇       ◇
                     ◇◇◇◇◇
                      NO │
                        ▼     DOES THE USER DESIRE TO REGISTER AT THIS
      416                     THIRD PARTY WEB SITE USING REGISTRAR?
                     ◇◇◇◇◇
               YES  ◇       ◇  NO
          ◄───────◇           ◇───────►
                    ◇       ◇
                     ◇◇◇◇◇
```

424
┌──────────────────────────────────┐   ┌──────────────────────────────────┐
│ THE THIRD PARTY WEB SITE SENDS A │   │ THE USER EXPLICITLY SUPPLIES   │
│ REQUEST TO THE REGISTRAR WEB SITE │   │ REGISTRATION INFORMATION FOR THE │
│ FOR REGISTERING THE USER AT THE   │   │ THIRD PARTY WEB SITE AND/OR A   │
│ REGISTRAR WEB SITE   │   │ DESIRED WEB SITE APPLICATION   │──420
└──────────────────────────────────┘   └──────────────────────────────────┘
                 │
                 ▼
┌──┐
│ PERFORM THE STEPS OF FIGS. 2 FOR REGISTERING│
│ THE USER AT THE REGISTRAR WEB SITE   │──── 428
└──┘
                 │
                 ▼
┌──┐
│ THE USER SUBMITS THE REGISTRATION FILL-OUT FORM (RECEIVED │
│ ABOVE FROM THE THIRD PARTY WEB SITE) TO THE THIRD PARTY WEB│
│ SITE: (A) INDICATING THAT REGISTRATION INFORMATION MAY BE │
│ OBTAINED FROM THE REGISTRAR WEB SITE, AND (B) PROVIDING A │
│ USER ID (AND OPTIONALLY A PASSWORD) FOR THE REGISTRAR WEB │
│ SITE TO BE USED AS IDENTIFICATION   │
└──┘
                                                    └── 432

THE THIRD PARTY WEB SITE INVOKES THE PROGRAM OF
FIG. 5 TO OBTAIN THE USER'S REGISTRATION DATA — 436

UPON VERIFICATION, THE USER IS GRANTED ACCESS TO
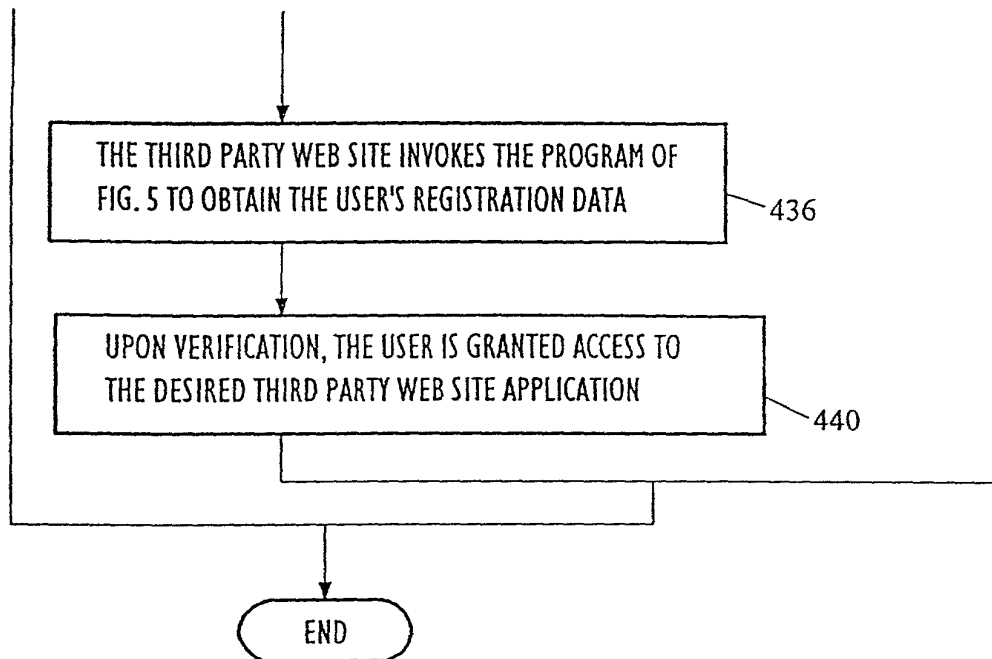THE DESIRED THIRD PARTY WEB SITE APPLICATION — 440

END

FIG. 4B

FIG. 5   REGISTRATION TRANSMISSION PROCESS BETWEEN REGISTRAR WEB
SITE AND THIRD PARTY WEB SITE (MAY BE INVOKED BY FIGS. 4)

START

504
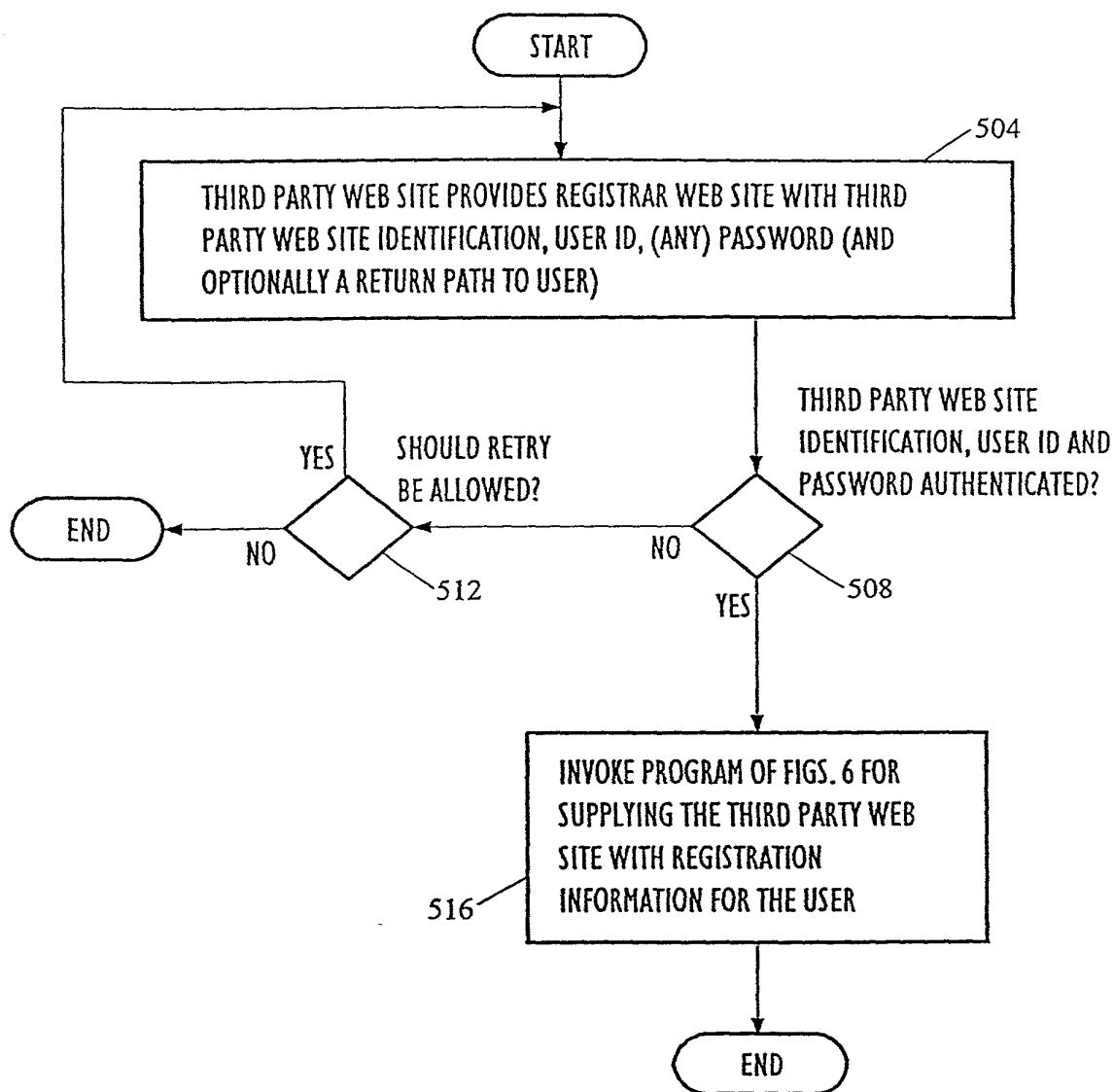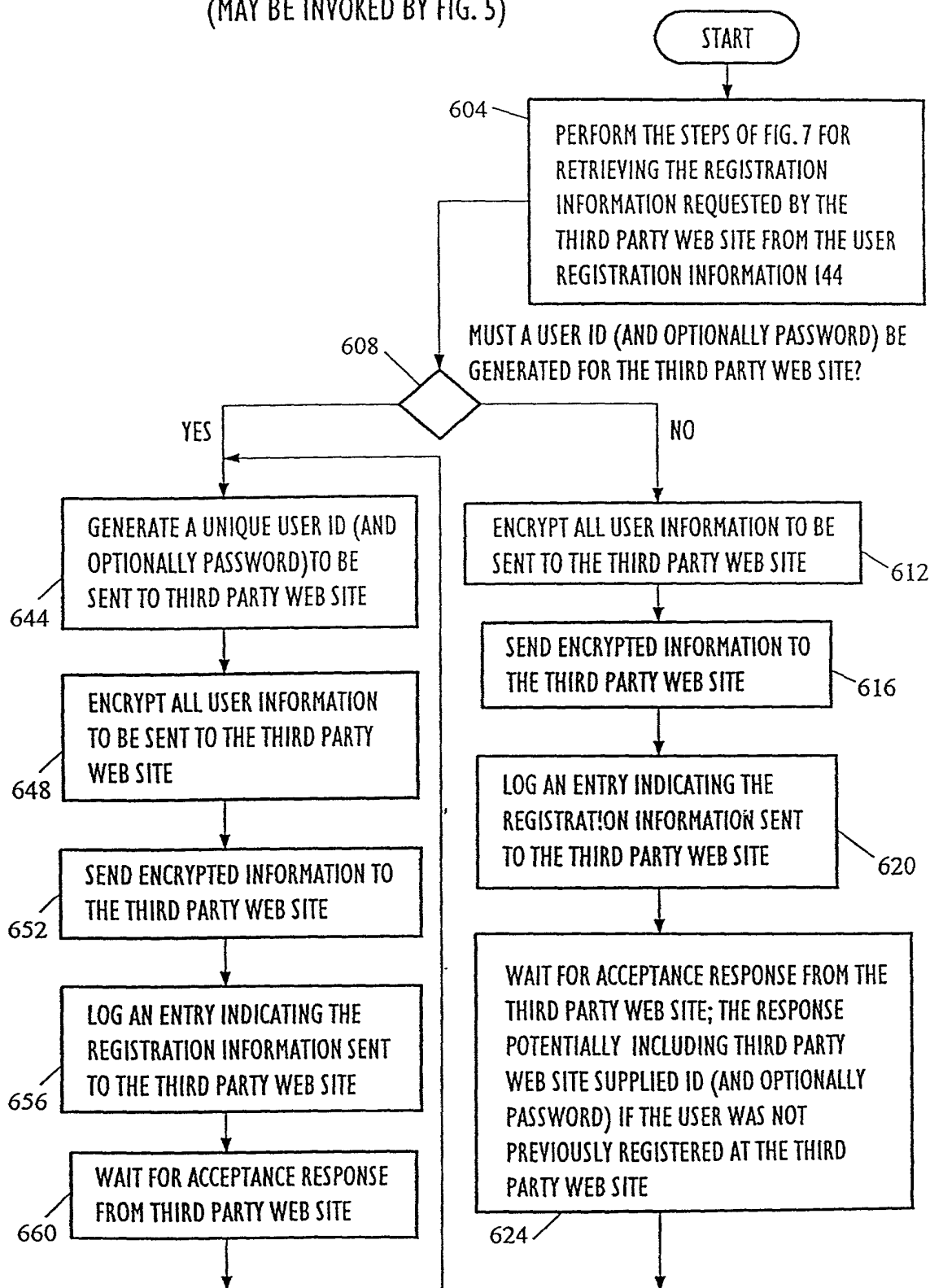
THIRD PARTY WEB SITE PROVIDES REGISTRAR WEB SITE WITH THIRD
PARTY WEB SITE IDENTIFICATION, USER ID, (ANY) PASSWORD (AND
OPTIONALLY A RETURN PATH TO USER)

THIRD PARTY WEB SITE
IDENTIFICATION, USER ID AND
PASSWORD AUTHENTICATED?

SHOULD RETRY
BE ALLOWED?

YES

END

NO

512

NO

YES

508

INVOKE PROGRAM OF FIGS. 6 FOR
SUPPLYING THE THIRD PARTY WEB
SITE WITH REGISTRATION
516   INFORMATION FOR THE USER

END

FIG. 6A   PROGRAM FOR SUPPLYING A THIRD PARTY WEB SITE WITH
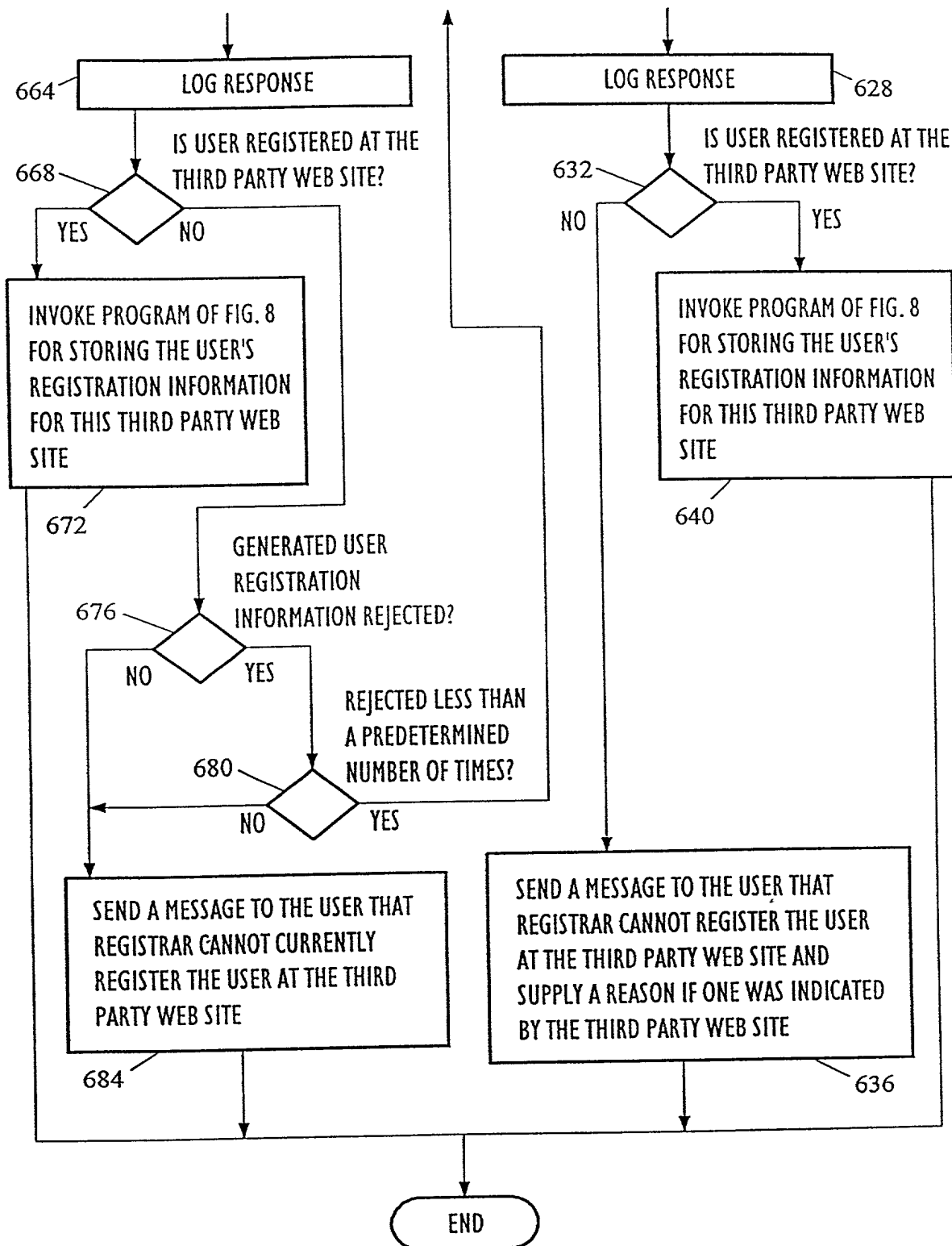REGISTRATION INFORMATION FROM REGISTRAR WEB SITE
(MAY BE INVOKED BY FIG. 5)

START

604 — PERFORM THE STEPS OF FIG. 7 FOR
RETRIEVING THE REGISTRATION
INFORMATION REQUESTED BY THE
THIRD PARTY WEB SITE FROM THE USER
REGISTRATION INFORMATION 144

608 — MUST A USER ID (AND OPTIONALLY PASSWORD) BE
GENERATED FOR THE THIRD PARTY WEB SITE?

YES

NO

GENERATE A UNIQUE USER ID (AND
OPTIONALLY PASSWORD) TO BE
SENT TO THIRD PARTY WEB SITE
644

ENCRYPT ALL USER INFORMATION TO BE
SENT TO THE THIRD PARTY WEB SITE
612

ENCRYPT ALL USER INFORMATION
TO BE SENT TO THE THIRD PARTY
WEB SITE
648

SEND ENCRYPTED INFORMATION TO
THE THIRD PARTY WEB SITE
616

SEND ENCRYPTED INFORMATION TO
THE THIRD PARTY WEB SITE
652

LOG AN ENTRY INDICATING THE
REGISTRATION INFORMATION SENT
TO THE THIRD PARTY WEB SITE
620

LOG AN ENTRY INDICATING THE
REGISTRATION INFORMATION SENT
TO THE THIRD PARTY WEB SITE
656

WAIT FOR ACCEPTANCE RESPONSE FROM THE
THIRD PARTY WEB SITE; THE RESPONSE
POTENTIALLY INCLUDING THIRD PARTY
WEB SITE SUPPLIED ID (AND OPTIONALLY
PASSWORD) IF THE USER WAS NOT
PREVIOUSLY REGISTERED AT THE THIRD
PARTY WEB SITE
624

WAIT FOR ACCEPTANCE RESPONSE
FROM THIRD PARTY WEB SITE
660

664 LOG RESPONSE

IS USER REGISTERED AT THE
THIRD PARTY WEB SITE?

668

YES NO

INVOKE PROGRAM OF FIG. 8
FOR STORING THE USER'S
REGISTRATION INFORMATION
FOR THIS THIRD PARTY WEB
SITE

672

GENERATED USER
REGISTRATION
INFORMATION REJECTED?

676

NO YES

REJECTED LESS THAN
A PREDETERMINED
NUMBER OF TIMES?

680

NO YES

SEND A MESSAGE TO THE USER THAT
REGISTRAR CANNOT CURRENTLY
REGISTER THE USER AT THE THIRD
PARTY WEB SITE

684

LOG RESPONSE **628**

IS USER REGISTERED AT THE
THIRD PARTY WEB SITE?

632

NO YES

INVOKE PROGRAM OF FIG. 8
FOR STORING THE USER'S
REGISTRATION INFORMATION
FOR THIS THIRD PARTY WEB
SITE

640

SEND A MESSAGE TO THE USER THAT
REGISTRAR CANNOT REGISTER THE USER
AT THE THIRD PARTY WEB SITE AND
SUPPLY A REASON IF ONE WAS INDICATED
BY THE THIRD PARTY WEB SITE

636

END

FIG. 6B

FIG. 7   PROGRAM FOR ACCESSING REGISTRATION INFORMATION FOR A THIRD
          PARTY WEB SITE (MAY BE INVOKED BY FIGS. 6A AND 10)

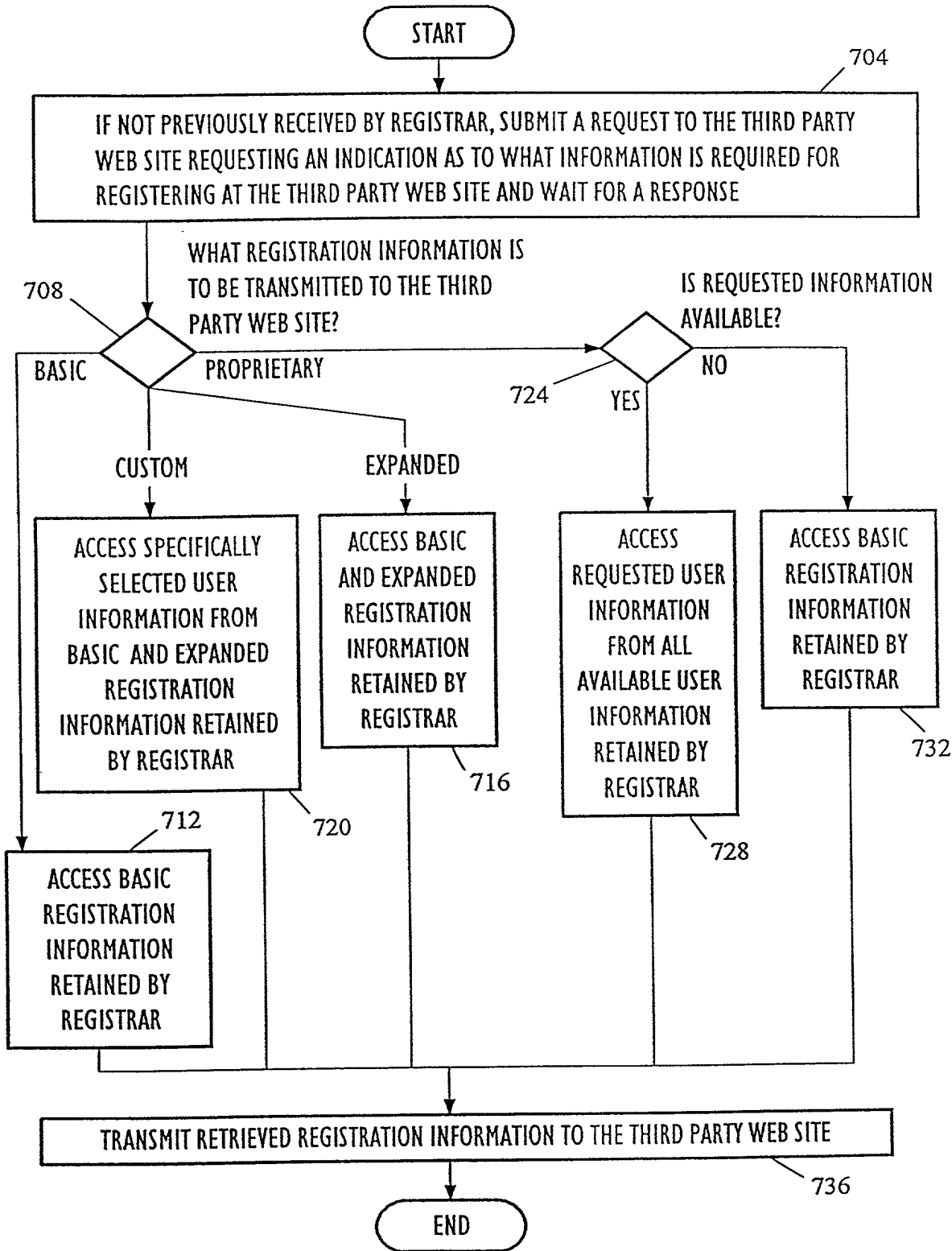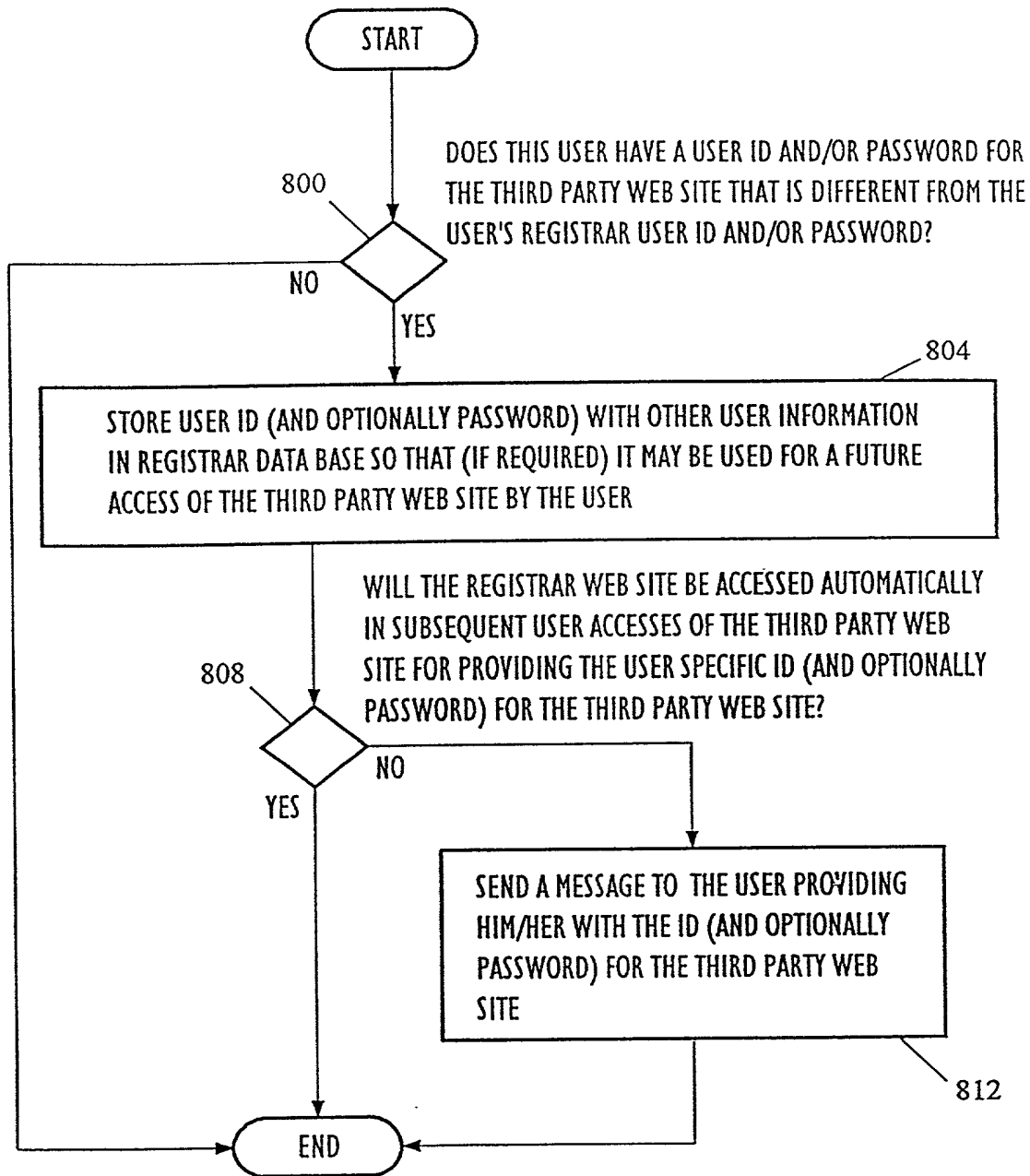(START)

IF NOT PREVIOUSLY RECEIVED BY REGISTRAR, SUBMIT A REQUEST TO THE THIRD PARTY
WEB SITE REQUESTING AN INDICATION AS TO WHAT INFORMATION IS REQUIRED FOR
REGISTERING AT THE THIRD PARTY WEB SITE AND WAIT FOR A RESPONSE   704

WHAT REGISTRATION INFORMATION IS
TO BE TRANSMITTED TO THE THIRD   IS REQUESTED INFORMATION
PARTY WEB SITE?   AVAILABLE?

708

BASIC   PROPRIETARY   NO
                                              724   YES

CUSTOM   EXPANDED

ACCESS SPECIFICALLY   ACCESS BASIC   ACCESS   ACCESS BASIC
SELECTED USER   AND EXPANDED   REQUESTED USER   REGISTRATION
INFORMATION FROM   REGISTRATION   INFORMATION   INFORMATION
BASIC AND EXPANDED   INFORMATION   FROM ALL   RETAINED BY
REGISTRATION   RETAINED BY   AVAILABLE USER   REGISTRAR
INFORMATION RETAINED REGISTRAR   INFORMATION
BY REGISTRAR   RETAINED BY   732
                                        REGISTRAR
         712   720
                     716   728

ACCESS BASIC
REGISTRATION
INFORMATION
RETAINED BY
REGISTRAR

TRANSMIT RETRIEVED REGISTRATION INFORMATION TO THE THIRD PARTY WEB SITE

                                                              736

(END)

FIG. 8   REGISTRAR STORES THIRD PARTY WEB SITE USER ID AND PASSWORD
(MAY BE INVOKED BY FIG. 6B)

START

800   DOES THIS USER HAVE A USER ID AND/OR PASSWORD FOR
THE THIRD PARTY WEB SITE THAT IS DIFFERENT FROM THE
USER'S REGISTRAR USER ID AND/OR PASSWORD?

NO

YES

804

STORE USER ID (AND OPTIONALLY PASSWORD) WITH OTHER USER INFORMATION
IN REGISTRAR DATA BASE SO THAT (IF REQUIRED) IT MAY BE USED FOR A FUTURE
ACCESS OF THE THIRD PARTY WEB SITE BY THE USER

WILL THE REGISTRAR WEB SITE BE ACCESSED AUTOMATICALLY
IN SUBSEQUENT USER ACCESSES OF THE THIRD PARTY WEB
SITE FOR PROVIDING THE USER SPECIFIC ID (AND OPTIONALLY
PASSWORD) FOR THE THIRD PARTY WEB SITE?

808

NO

YES

SEND A MESSAGE TO THE USER PROVIDING
HIM/HER WITH THE ID (AND OPTIONALLY
PASSWORD) FOR THE THIRD PARTY WEB
SITE

812

END

FIG. 9   REGISTRATION TRANSMISSION PROCESS BETWEEN REGISTRAR ON
THE USER'S NETWORK NODE AND A THIRD PARTY WEB SITE
(INVOKED BY THE USER)

```
                        ┌─────────────┐
                        │    START    │
                        └─────────────┘
                               │
                               ▼
              ┌──────────────────────────────────┐
              │  THE USER SENDS A REQUEST TO ACCESS │────  904
              │  A THIRD PARTY WEB SITE            │
              └──────────────────────────────────┘
                               │
                               ▼
          ┌──────────────────────────────────────────┐
          │  THE THIRD PARTY WEB SITE RESPONDS WITH A HOME │──── 908
          │  PAGE HAVING A REGISTRATION FILL-OUT FORM      │
          └──────────────────────────────────────────┘
                               │
                               ▼
    ┌─────────────────────────────────────────────────────┐
    │  THE USER INDICATES ON THE FILL-OUT FORM THAT HE/SHE DESIRES TO │
    │  REGISTER AT THE THIRD PARTY WEB SITE AND THAT REGISTRATION     │
    │  INFORMATION CAN BE RETRIEVED USING REGISTRAR ON THE USER'S     │──── 912
    │  CLIENT NODE                                                    │
    └─────────────────────────────────────────────────────┘
                               │
                               ▼
    ┌─────────────────────────────────────────────────────┐
    │  THE USER SPECIFIES THAT THE REGISTRATION FILL-OUT FORM IS TO BE │
    │  SUBMITTED TO THE THIRD PARTY WEB SITE. NOTE, A REGISTRAR        │
    │  PROGRAM IS (OR WILL HAVE BEEN) INVOKED ON THE USER'S NODE       │
    │  THAT PERFORMS THE STEPS OF FIG. 10 FOR SUPPLYING THE           │──── 916
    │  INFORMATION FOR REGISTERING AT THE THIRD PARTY WEB SITE         │
    └─────────────────────────────────────────────────────┘
                               │
                               ▼
        ┌──────────────────────────────────────────┐
        │  SEND A MESSAGE TO A REGISTRAR WEB SITE INDICATING THAT │
        │  THE USER HAS REGISTERED AT THE THIRD PARTY WEB SITE    │──── 920
        └──────────────────────────────────────────┘
                               │
                               ▼
                        ┌─────────────┐
                        │     END     │
                        └─────────────┘
```
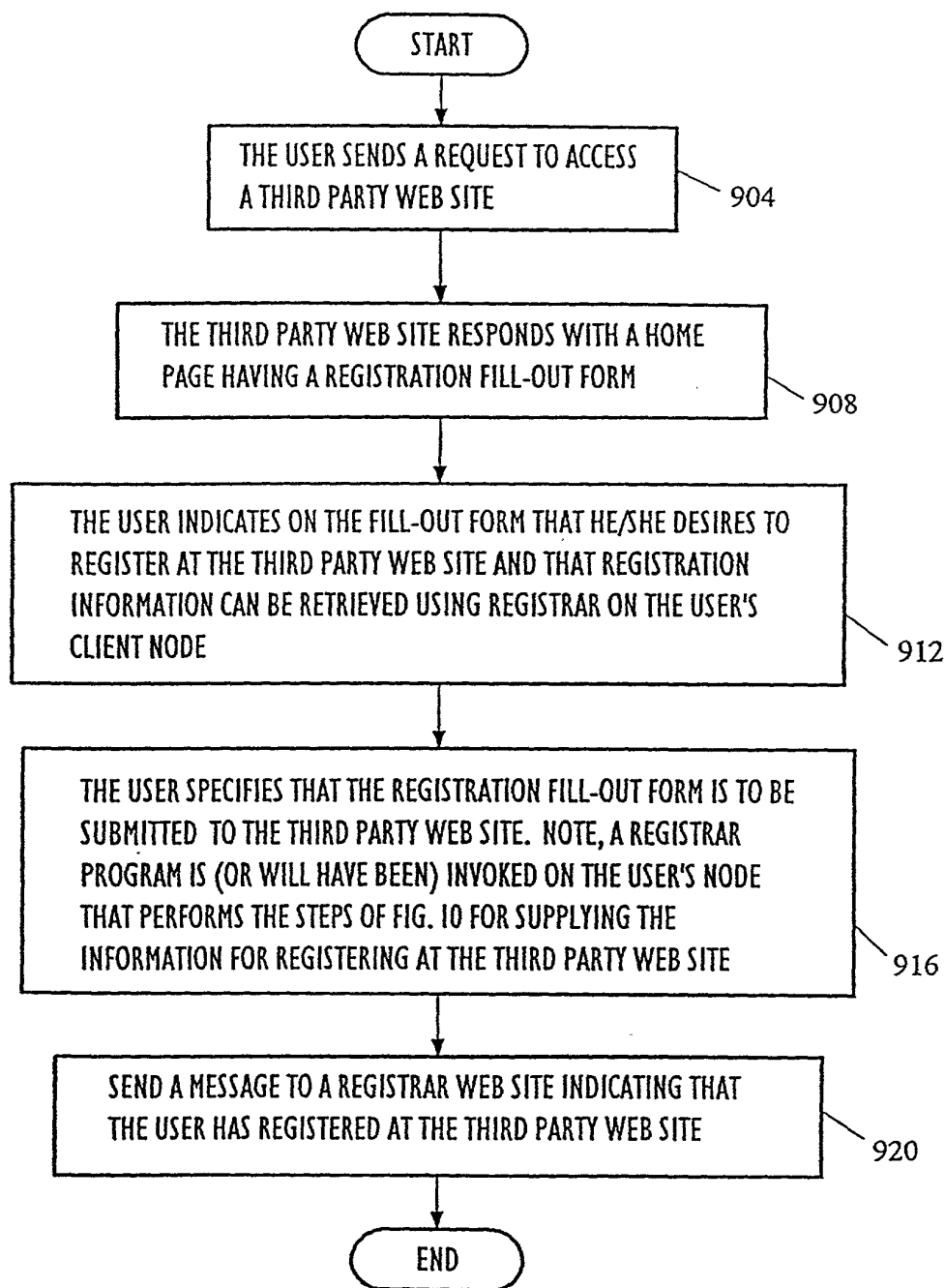
FIG. 10   PROGRAM FOR SUPPLYING A THIRD PARTY WEB SITE WITH
REGISTRATION INFORMATION RETAINED BY REGISTRAR ON THE
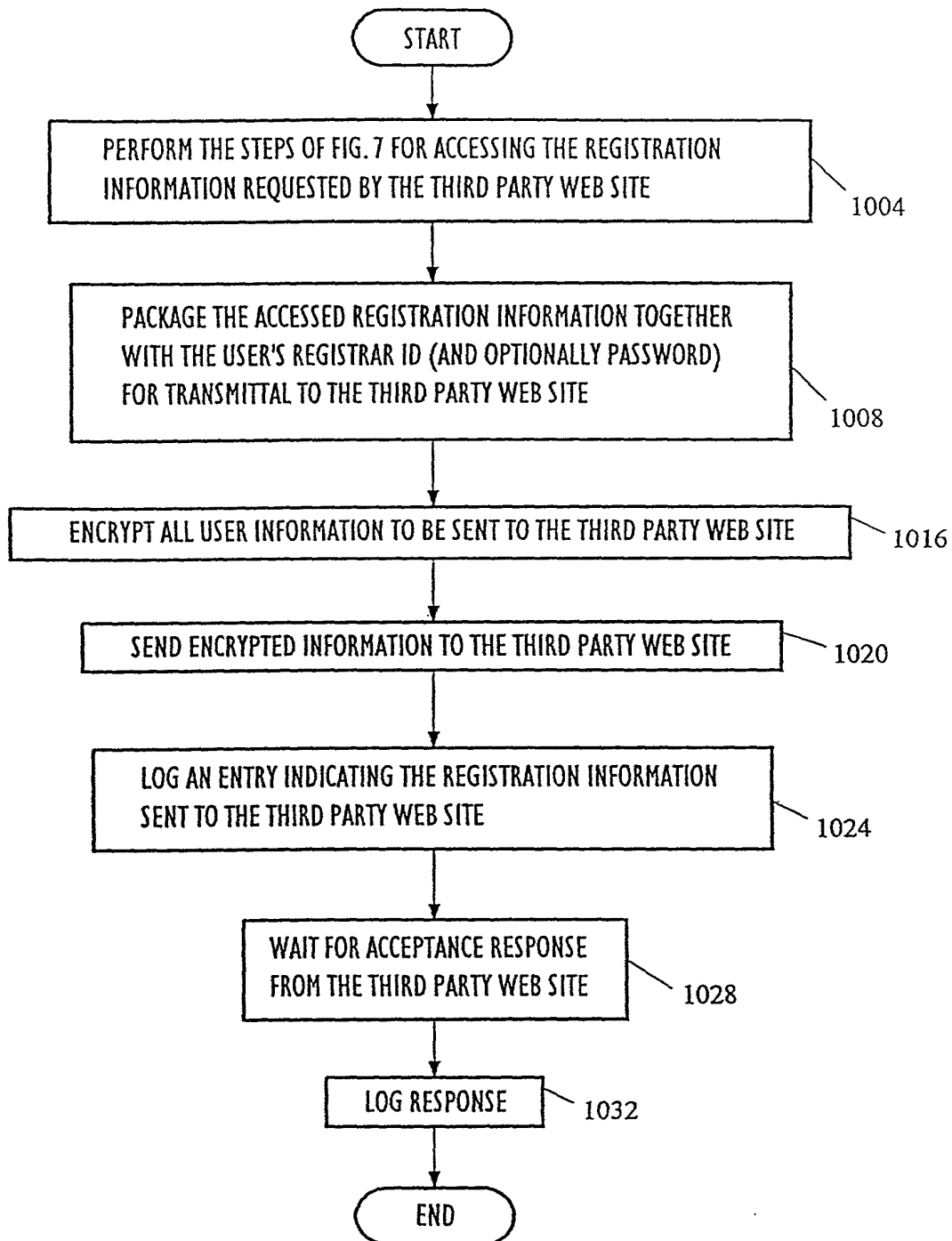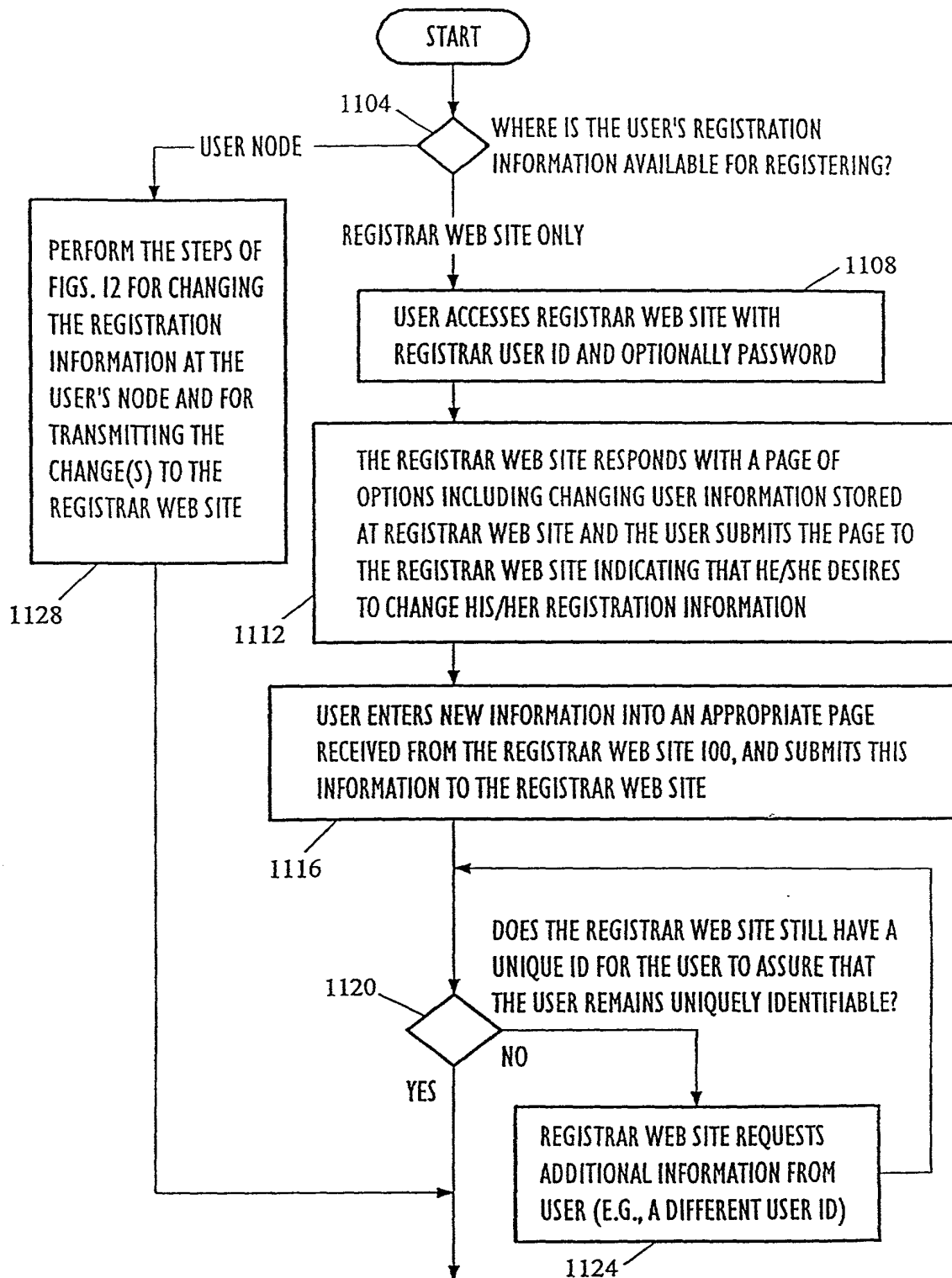USER'S NODE (MAY BE INVOKED BY FIG. 9)

START

PERFORM THE STEPS OF FIG. 7 FOR ACCESSING THE REGISTRATION
INFORMATION REQUESTED BY THE THIRD PARTY WEB SITE   1004

PACKAGE THE ACCESSED REGISTRATION INFORMATION TOGETHER
WITH THE USER'S REGISTRAR ID (AND OPTIONALLY PASSWORD)
FOR TRANSMITTAL TO THE THIRD PARTY WEB SITE   1008

ENCRYPT ALL USER INFORMATION TO BE SENT TO THE THIRD PARTY WEB SITE   1016

SEND ENCRYPTED INFORMATION TO THE THIRD PARTY WEB SITE   1020

LOG AN ENTRY INDICATING THE REGISTRATION INFORMATION
SENT TO THE THIRD PARTY WEB SITE   1024

WAIT FOR ACCEPTANCE RESPONSE
FROM THE THIRD PARTY WEB SITE   1028

LOG RESPONSE   1032

END

FIG. 11A CHANGE USER INFORMATION IN REGISTRAR
(INVOKED BY THE USER)

START

1104
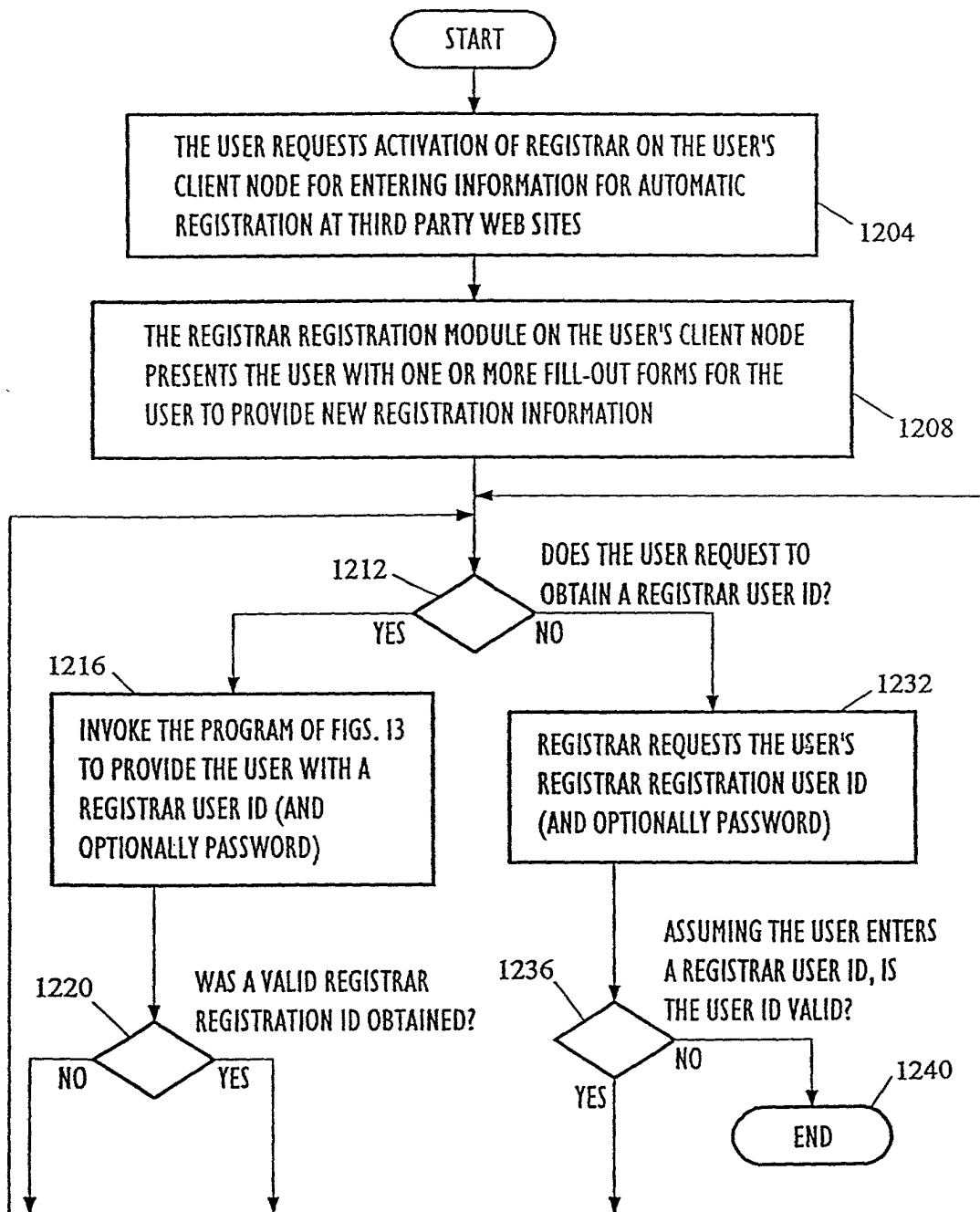USER NODE ─── WHERE IS THE USER'S REGISTRATION
INFORMATION AVAILABLE FOR REGISTERING?

REGISTRAR WEB SITE ONLY

1108
USER ACCESSES REGISTRAR WEB SITE WITH
REGISTRAR USER ID AND OPTIONALLY PASSWORD

THE REGISTRAR WEB SITE RESPONDS WITH A PAGE OF
OPTIONS INCLUDING CHANGING USER INFORMATION STORED
AT REGISTRAR WEB SITE AND THE USER SUBMITS THE PAGE TO
THE REGISTRAR WEB SITE INDICATING THAT HE/SHE DESIRES
TO CHANGE HIS/HER REGISTRATION INFORMATION
1112

PERFORM THE STEPS OF
FIGS. I2 FOR CHANGING
THE REGISTRATION
INFORMATION AT THE
USER'S NODE AND FOR
TRANSMITTING THE
CHANGE(S) TO THE
REGISTRAR WEB SITE

1128

USER ENTERS NEW INFORMATION INTO AN APPROPRIATE PAGE
RECEIVED FROM THE REGISTRAR WEB SITE I00, AND SUBMITS THIS
INFORMATION TO THE REGISTRAR WEB SITE

1116

DOES THE REGISTRAR WEB SITE STILL HAVE A
UNIQUE ID FOR THE USER TO ASSURE THAT
THE USER REMAINS UNIQUELY IDENTIFIABLE?

1120

NO

YES

REGISTRAR WEB SITE REQUESTS
ADDITIONAL INFORMATION FROM
USER (E.G., A DIFFERENT USER ID)

1124

DETERMINE THE THIRD PARTY WEB SITES HAVING
OUTDATED USER REGISTRATION INFORMATION —1132

FOR EACH THIRD PARTY WEB SITE DETERMINED, PROVIDE
THE PORTION OF THE NEWLY RECEIVED INFORMATION
NECESSARY TO UPDATE THE THIRD PARTY WEB SITE —1136

DETERMINE WEB SITES
TO RESUBMIT NEW —1144
USER INFORMATION

HAVE ALL THIRD PARTY WEB SITES RESPONDED
INDICATING CHANGES RECEIVED?

NO —1140

YES

END

FIG. 11B

FIG. 12A USER ENTERS REGISTRATION INFORMATION INTO THE USER'S CLIENT
NODE FOR TRANSMITTAL FROM THE USER'S NODE TO THE REGISTRAR
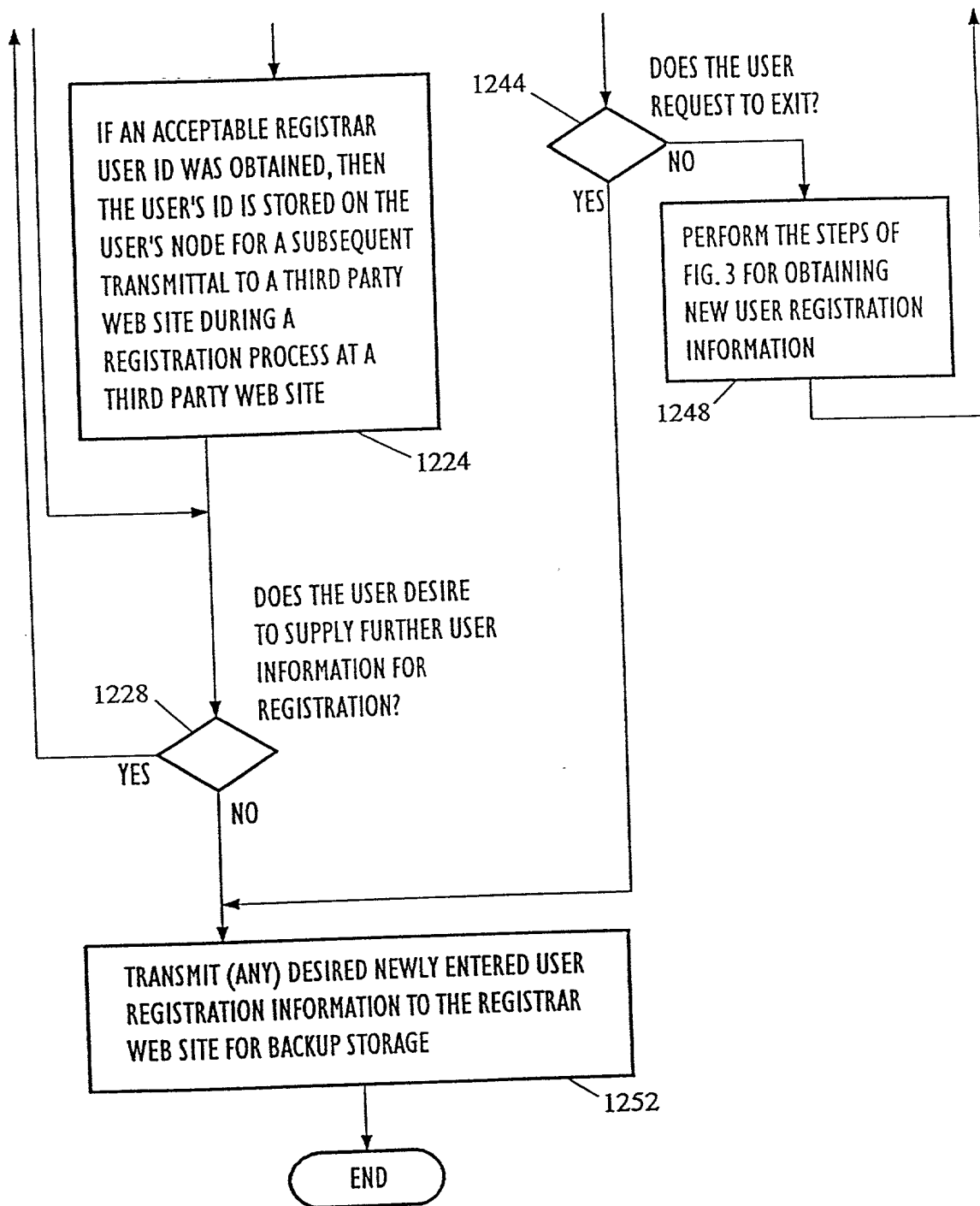WEB SITE (MAY BE INVOKED DIRECTLY BY THE USER OR BY FIGS. 11)

START

THE USER REQUESTS ACTIVATION OF REGISTRAR ON THE USER'S
CLIENT NODE FOR ENTERING INFORMATION FOR AUTOMATIC
REGISTRATION AT THIRD PARTY WEB SITES — 1204

THE REGISTRAR REGISTRATION MODULE ON THE USER'S CLIENT NODE
PRESENTS THE USER WITH ONE OR MORE FILL-OUT FORMS FOR THE
USER TO PROVIDE NEW REGISTRATION INFORMATION — 1208

1212

DOES THE USER REQUEST TO
OBTAIN A REGISTRAR USER ID?

YES   NO

1216

INVOKE THE PROGRAM OF FIGS. 13
TO PROVIDE THE USER WITH A
REGISTRAR USER ID (AND
OPTIONALLY PASSWORD)

1232

REGISTRAR REQUESTS THE USER'S
REGISTRAR REGISTRATION USER ID
(AND OPTIONALLY PASSWORD)

WAS A VALID REGISTRAR
REGISTRATION ID OBTAINED?

1220

NO   YES

ASSUMING THE USER ENTERS
A REGISTRAR USER ID, IS
THE USER ID VALID?

1236

NO

YES

1240

END

IF AN ACCEPTABLE REGISTRAR
USER ID WAS OBTAINED, THEN
THE USER'S ID IS STORED ON THE
USER'S NODE FOR A SUBSEQUENT
TRANSMITTAL TO A THIRD PARTY
WEB SITE DURING A
REGISTRATION PROCESS AT A
THIRD PARTY WEB SITE

1224

DOES THE USER
REQUEST TO EXIT?

1244

NO

YES

PERFORM THE STEPS OF
FIG. 3 FOR OBTAINING
NEW USER REGISTRATION
INFORMATION

1248

DOES THE USER DESIRE
TO SUPPLY FURTHER USER
INFORMATION FOR
REGISTRATION?

1228

YES

NO

TRANSMIT (ANY) DESIRED NEWLY ENTERED USER
REGISTRATION INFORMATION TO THE REGISTRAR
WEB SITE FOR BACKUP STORAGE

1252

END
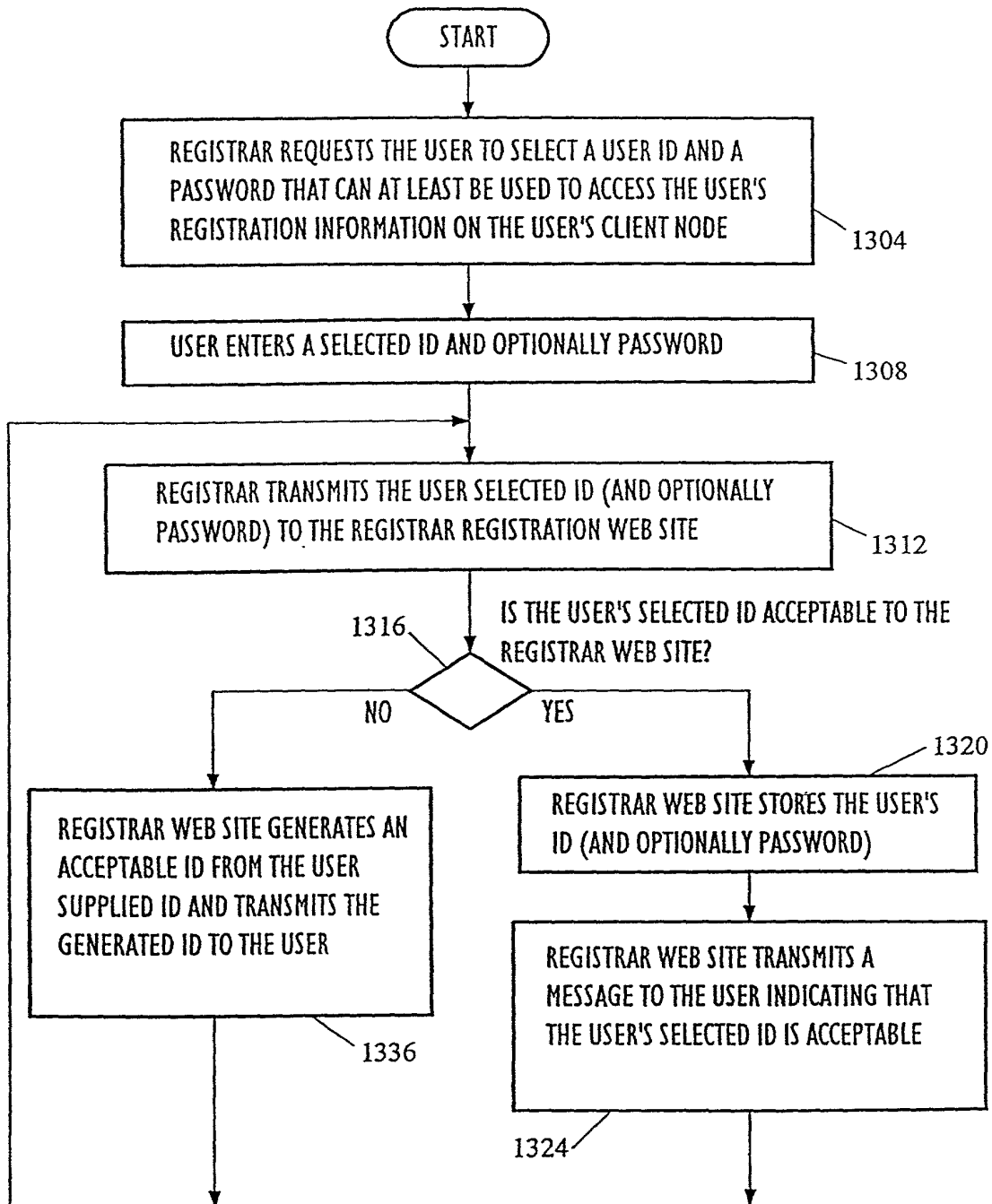
FIG. 12B

FIG. 13A
REGISTRAR USER ID PROVIDED FOR USER WHEREIN THE USER'S WEB SITE REGISTRATION IS MAINTAINED ON THE USER'S CLIENT NODE

```
                        ┌─────────┐
                        │  START  │
                        └─────────┘
                             │
                             ▼
        ┌──────────────────────────────────────────────┐
        │ REGISTRAR REQUESTS THE USER TO SELECT A USER  │
        │ ID AND A PASSWORD THAT CAN AT LEAST BE USED   │
        │ TO ACCESS THE USER'S REGISTRATION INFORMATION │──── 1304
        │ ON THE USER'S CLIENT NODE                     │
        └──────────────────────────────────────────────┘
                             │
                             ▼
        ┌──────────────────────────────────────────────┐
        │ USER ENTERS A SELECTED ID AND OPTIONALLY      │──── 1308
        │ PASSWORD                                      │
        └──────────────────────────────────────────────┘
                             │
                             ▼
        ┌──────────────────────────────────────────────┐
        │ REGISTRAR TRANSMITS THE USER SELECTED ID      │
        │ (AND OPTIONALLY PASSWORD) TO THE REGISTRAR    │──── 1312
        │ REGISTRATION WEB SITE                         │
        └──────────────────────────────────────────────┘
```
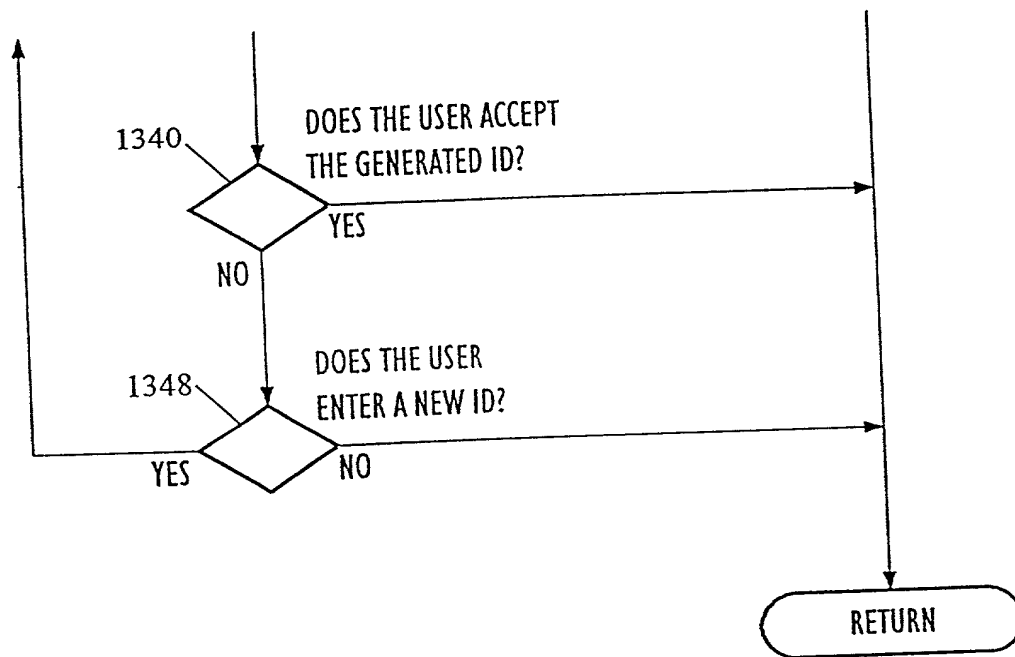
IS THE USER'S SELECTED ID ACCEPTABLE TO THE REGISTRAR WEB SITE?

1316

NO / YES

1320

REGISTRAR WEB SITE GENERATES AN ACCEPTABLE ID FROM THE USER SUPPLIED ID AND TRANSMITS THE GENERATED ID TO THE USER

1336

REGISTRAR WEB SITE STORES THE USER'S ID (AND OPTIONALLY PASSWORD)

REGISTRAR WEB SITE TRANSMITS A MESSAGE TO THE USER INDICATING THAT THE USER'S SELECTED ID IS ACCEPTABLE

1324

DOES THE USER ACCEPT
THE GENERATED ID?

1340

YES

NO

DOES THE USER
ENTER A NEW ID?

1348

YES

NO

RETURN

FIG. 13B